

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:		)	
	Murren et al.	)	
Serial No:	09/845,737	)	Appeal No.
Confirmation No:	3462	)	
Filed:	4/30/2001	)	
For:	Architecture and Process for Creating Software Applications for Multiple Domains	)	
Examiner	Jeffrey Swearingen	)	

The Honorable Commissioner of Patents  
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**BRIEF OF APPELLANT**

The Applicant has filed a timely Notice of Appeal from the action of the Examiner in finally rejecting all of the claims that were considered in this application. This Brief is being filed under the provisions of 37 CFR 41.37. The Filing Fee, as set forth in 37 C.F.R. § 1.17(c), is submitted herewith.

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### **REAL PARTY IN INTEREST**

The real party in interest is General Electric Capital Corporation, by way of assignment from Murren et al., who is the named inventive entity and is captioned in the present Brief.

## **RELATED APPEALS AND INTERFERENCES**

While not formally related (as defined under 35 U.S.C. §§120 or 121), a Notice of Appeal has been filed in co-pending Application Serial Number 09/845,752 entitled; "Process for Managing the Presentation and Rendering of Application Content", naming inventive entity Murren et al. No other Appeals or Interferences are believed to be pending or relevant under *M.P.E.P.* §1205.02.

Due to the rationales cited in some of the Examiner's "Objections/Requirements", the "Objections/Requirements" raise issues which are properly the subject of an Appeal to this Board. The "Objections/Requirements" were the subject of a Petition to the Commissioner under 37 CFR 1.181, which remains pending. The "Objections/Requirements" are discussed herein with respect to the matters of law which properly addressed in this Appeal. Applicant seeks reversal of the "Objections/Requirements" as the rationales cited by the Examiner are within the purview of this Board. Applicant appreciates the "unordinary" nature of including matters which are normally the subject of a petition in an Appeal. *M.P.E.P.* §1201.

### **STATUS OF CLAIMS**

Allowed Claims: No claims have been allowed.

Cancelled Claims: No claims have been cancelled.

Pending Claims: Claims 1-30, 48-51 and 58 are pending examination in the application and stand finally rejected by the Examiner. Claims 31-37 and 52-57 are withdrawn.

Appealed claims: Claims 1-30, 48-51 and 58 form the basis for this appeal.

### **STATUS OF AMENDMENTS**

No amendment to the claims has been made since the Final Action of August 9, 2006.

On April 28, 2006 Applicant filed an amendment and response. The amendment (in addition to amending the Written Description) added new Claim 58.

On September 12, 2005 Applicant filed a Response and amended Claims 1, 16 and 48.

## SUMMARY OF THE CLAIMED SUBJECT MATTER

A multi-layer software architecture for construction of diverse domains, such as business domains, is discussed. The instant application describes hierarchical arranged architectures which may permit removal or modification of layers within the hierarchy without impacting other layers. *Application, Abstract.*

Following is a brief summary of independent claims 1, 48 and 58 with exemplary references to the disclosure inserted for convenience. Dependent Claims 10, 17, 20 and 22 are included as the claims are specifically discussed. References should not be understood as limiting any feature to the recited portions of the disclosure.

**Claim 1** recites a server system (FIGS. 1 and 2) comprising: one or more computers; and a multi-layer application (FIG. 2, 110) executing on the computers (112(1), 112(2), 112(3), . . . , 112(s)) (page 6, line 24- page 7, line 27) to handle client requests submitted by various client devices (102), the multi-layer application (FIG. 2, 110) (pages 8, line 19- page 9, line 2) comprising: a problem-solving logic layer (204 (for a business logic) (page 9, lines 11-21) to process the client (102) requests according to an associated problem domain (page 11, lines 1-4), wherein the problem domain pertains to a particular category of service, the problem-solving logic layer (204) (page 9, lines 11-21) containing one or more execution models (230) to perform various sets of tasks when processing the client requests, the problem-solving logic layer (204) producing replies to the client requests; an execution environment layer (202) (page 9, lines 22-27) to receive the

client requests and select an appropriate execution model (230) in the problem-solving logic layer (204) for processing the client requests; an interfacing layer [which may include 208, 206 (which are specifically recited in Claim 10)] to interface the problem-solving logic layer (204) with one or more resources (108(1), 108(2), . . . , 108(M)) so that the execution models (230) may utilize the resources (108(1), 108(2), . . . , 108(M)) when processing the client requests; and a presentation layer (212) to receive the replies produced by the problem-solving logic layer (204) and to structure the replies in a manner that makes the replies presentable on the various client devices, wherein any of the layers may be changed without impacting other layers (page 6, lines 10-21).

**Claim 10** recites a server system (FIG. 1, 112(1), 112(2), 112(3), . . . , 112(S)) as recited in claim 1, wherein the interfacing layer comprises: a data abstraction layer (208) (page 12, lines 9-20) to obtain data from the resources and map the data into a domain framework (250) that models information flow for a specific problem domain; and a data coordination layer (206) (page 12, lines 9-20) that provides an interface for the problem-solving logic layer (204), in this case a business logic layer) to access the domain framework of the data abstraction layer and obtain the data.

**Claim 17** recites a server system as recited in claim 1, wherein the presentation layer (212) (page 15, lines 8-17) comprises:

a presentation module to determine how the replies will appear on the client devices to users; and



a rendering module (260), separate from the presentation module (page 15, lines 1-17), to determine how to render the replies on the client devices.

**Claim 20** recites a server system (FIG. 1, 112(1), 112(2), 112(3), . . . , 112(S)) as recited in claim 1, further comprising a constraint system to constrain operation of the multi-layer application (FIG. 2) (page 12, lines 9-20) according to multiple different constraints (page 50, line 17-page 55, line 25), the constraint system comprising a hierarchy (FIG 12) of constraint layers (1202(1)-1202(k)), with each constraint layer containing a set of one or more constraints that customize operation of the multi-layer application.

**Claim 22** recites server system as recited in claim 21, wherein the hierarchy of constraints comprises constraints selected from a group of constraints (FIG.12) comprising: legally mandated constraints (page 51, lines 11-17 and page 52, line 26-page 53, line 4) to constrain operation of the multi-layer application according to legal principles; company-mandated constraints (page 53, lines 5-11) to constrain operation of the multi-layer application according to preferences of a company that operates the application; customer constraints (page 53, lines 12-19) to constrain operation of the multi-layer application according to preferences of customers; cultural constraints (page 53, lines 12-19) to constrain operation of the multi-layer application according to cultural aspects; and end user constraints to constrain operation of the multi-layer application according to preferences of an end user (page 53, lines 20-24).

**Claim 29** recites a server system as recited in claim 1, further comprising:  
a resource bundle (page 94, lines 20-30) containing locale-specific content that is authored for a particular locale; and  
a resource bundle manager (2202) (page 98, lines 16-22) to populate a locale-independent core (FIG. 23) with the locale-sensitive content in the resource bundle to produce a computer-servable document that can be served by the multi-layer application to the particular locale.

**Claim 30** recites a server system as recited in claim 29, wherein the resource bundle manager (2202) (page 98, lines 16-22) resides in the interfacing layer (FIG. 2 and 22).

**Claim 48** recites a method (FIG. 3) for processing client requests in a system (FIG. 1), comprising: receiving requests from multiple clients (302), the requests being related to a business-related problem domain (page 6, lines 1-5), wherein the business-related problem domain pertains to a particular category of business-related service (page 3, lines 14-17 and page 6, lines 7-10); processing (308) the requests within problem-solving logic (204) to produce replies within the business-related problem domain (page 12, lines 1-5), the processing comprising requesting data to be used in formulating the replies (page 17, lines 16-22); retrieving the data from one or more external resources (page 17, lines 23-27) and mapping the data to a domain framework for the business-related problem domain (page 3, lines 25-26; page 12, lines 22-25), the domain framework being independent from the problem-solving logic (page 9, line 18); and interfacing (page 3, line 27- page 4, line 1) the problem-solving logic to the domain

framework to obtain the data for use in processing the request, wherein a new business-related problem domain can be exchanged for a previous business-related problem domain by replacing one or more components of the system, without having to reconstruct an entire application solution for the new business-related problem domain.

**Claim 58** recites a server system (FIG. 1, 112(1), 112(2), 112(3), . . . , 112(S)) comprising: one or more computers (112(1), 112(2), 112(3), . . . , 112(S)) ; and a multi-layer application (FIG. 2, 110) executing on the computers to handle client requests submitted by various client devices (302), the multi-layer application comprising: a problem-solving logic layer (an exemplary business layer is discussed, 204) to process the client requests according to an associated problem domain (page 6, lines 5-10), wherein the problem domain pertains to a particular category of service (page 3, lines 14-17 and page 6, lines 7-10), the problem-solving logic layer containing one or more execution models (230) to perform various sets of tasks when processing the client requests, the problem-solving logic layer (204) producing replies to the client requests (302); an execution environment layer (202) to receive the client requests and select an appropriate execution model (230) in the problem-solving logic layer (204) for processing the client requests; an interfacing layer (below) to interface the problem-solving logic layer with one or more resources (108(1), 108(2), . . . , 108(M)) so that the execution models (230) may utilize the resources when processing the client requests, wherein the interfacing layer comprises: a data abstraction layer (208) to obtain data from the resources and map the data into a domain framework (250) that models information flow for a specific problem domain; and a data coordination layer (206) that provides an interface for the

problem-solving logic layer to access the domain framework (250) of the data abstraction layer and obtain the data; and a presentation layer (212) to receive the replies produced by the problem-solving logic layer and to structure the replies in a manner that makes the replies presentable on the various client devices (page 10, lines 3-5).

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. The Specification and Claims 1-30 and 48-51 stand rejected under 35 U.S.C. §112, paragraph one. A decision on this matter would obviate a Requirement for a Substitute Specification, under 37 CFR 1.125.

2. Claims 1-30 and 48-51 stand rejected under 35 U.S.C. §112, paragraph two.

3. The Drawings are “objected” to under 37 CFR 1.81(a). As this “Objection” cites “37 CFR 1.81(a)” mandating drawings where “necessary”) this “Objection” touches of the merits of this Application under 35 U.S.C. §113 first sentence, rather than 35 U.S.C. §113, second sentence (where drawings are merely acknowledged). Applicant appeals on this basis.

4. Claims 1-9, 12-16, 18-21, 23-24 and 48-51 stand rejected 35 U.S.C. §102(b) over Stevens, W, *Unix<sup>®</sup> Network Programming*, PTR Prentice Hall, Englewood Cliffs, NJ, selected portions (1990). (Hereinafter, “Stevens”)

5. Claims 10, 11, 17, 22, 25-30 and 58 stand rejected under 35 U.S.C. §103(a) over the following combinations.

a) Claim 17 is rejected over Stevens in view of Official Notice.

b) Claim 22 is rejected over Stevens (alone).

c) Claims 10, 11 and 58 are rejected over Stevens in view of Gilly, D., *Unix® in a Nutshell; A Desktop Quick Reference for System V Release 4 and Solaris 2.0*, O'Reilly & Associates, Inc., Cambridge, selected passages (1986). (Hereinafter "Gilly").

d) Claims 25-28 are rejected over Stevens in view of Peek, et al., *Unix Power Tools®*, O'Reilly & Associates, Inc., Cambridge, selected passages (1997). (Hereinafter "Peek").

e) Claims 29 and 30 are rejected over Stevens in view of Tuthill, et al., *Creating Worldwide Software: Solaris International Developer's Guide 2<sup>nd</sup> Edition*, Sun Microsystems Press, Mountain View, CA, selected portions (1997).

6. Claims 1, 17, 20-25 and 48-50 are provisionally rejected over a non-statutory double patenting rejection. Applicant appeals the implication (although provisionally rejected) of the aforementioned claims. In particular, the Examiner has issued the provisional rejection on the following rationales:

a) Claims 1, 17, 48-50 are provisionally rejected over "claims 1-8 of co-pending Application No. 09/845,752 Final Action Dated 8/9/06, page 18-22, item 78-85. (While the Examiner asserts that "09/847,067" is utilized, this statement is incorrect as the claim language in the 09/847,067 Application does not match that cited in the Final Action).

b) Claims 20-22 are provisionally rejected over “claims 1-8 of co-pending Application No. 09/845,780 in view of 09/845,752.” Final Action Dated 8/9/06, page 22, item 93.

c) Claims 23 and 24 are provisionally rejected over “claim 1 of co-pending Application No. 0/847,037 (sic 09/847,037) in view of 09/845,752.” Final Action Dated 8/9/06, page 21, item 86.

d) Claim 25 is provisionally rejected over “claim 1 of co-pending Application No. 09/845,752 in view of 09/847,037 and 09/847,038 and 09/845,751.” Final Action Dated 8/9/06, page 21, item 90.

## ARGUMENT

### Brief History:

Due to the examination in this case, Applicant includes a brief historical summary for the Board's convenience. This is in accordance with *M.P.E.P.* §1205.02.

The instant application was filed on April 30, 2001 with Claims 1-57 of which Claims 1, 31, 43, 48, and 52 are independent. In chronological order:

- 1) In response to a Restriction Requirement of December 21, 2004, Applicant elected to prosecute Claims 1-30 and 48-51, included in Group I, and traversed the restriction requirement, arguing that examination of all the included claims would not result in an undue burden on the Office.
- 2) A non-final Action was mailed on March 10, 2005 the Action included rejections directed to the following aspects:
  - a. The Drawings were objected under *37 CFR 1.81(a)*;
  - b. The Specification was rejected under *35 U.S.C. §112, paragraph one*
  - c. Claims 1-30 and 48-51 were provisionally rejected over the judicially created doctrine obviousness double patenting rejection over several other applications filed on the behalf of the assignee of the present application. (Applicant in a paper dated September 12, 2005 noted three applications were outside of the "family" of cases cited by the Examiner);
  - d. An information request under *37 CFR 1.105* sought documentation related to the following: a documentation of actual uses; an identification of



products and services embodying the claimed subject matter; an identification of the properties of similar products and services found in the prior art; citation and copies of each publication that any of the applicants relied on to draft the claimed subject matter, including a sub-request for a concise explanation; the names of products and services that have incorporated the claimed subject matter prior to filing;

e. Claims 1-30 and 48-51 were rejected under 35 U.S.C. §112, *paragraph two*;

f. Claims 1-9, 12-16, 18-21, 23-24, and 48-51 were rejected under 35 U.S.C. §102(b) over a non-patent reference entitled: “Unix Network Programming” (Stevens); and

g. The below Claims were rejected under 35 U.S.C. §103(a):

Claim 17 was rejected over Stevens in-view of “Official Notice”;

Claims 10 and 11 were rejected over Stevens in-view of Gilly;

Claims 25-28 were rejected over Stevens in-view of Peek; and

Claims 29 and 30 were rejected over Stevens reference in-view of Tuthill.

3) On September 12, 2005 Applicant filed an IDS citing both patent and non-patent documents.

4) Concurrently with Item 3, the Applicant filed a response and amended Claims 1, 16 and 48. Applicant also noted that within the one year grace period afforded by 35 U.S.C. 102(b) “GethSource” incorporated logic generally related

to claimed subject matter. The response included arguments directed to the rejections noted in Item 2.

5) On November 30, 2005 the Office issued a non-final Action including a "Response to Argument" section which generally maintained the rejection/objection listed in Item 3 and included the following obviousness double patenting objections: Claims 1, 17 and 48-50 Applications 09/847,067; Claims 23 and 24 Application 0/847,037 (presumed to be 09/847,037) "in-view of" Application 09/845,752; Claim 25 Application 09/845,752 "in view of" Application 09/847,037 and Application 09/847,038 and Application 09/845,751; Claims 20-22 Application 09/845,780 "in view of" Application 09/845,752. The Action also imposed a "Requirement for Information" and requested documentation of the development and deployment of "GEtheSource."

6) On April 28, 2006 Applicant filed an IDS citing both patent and non-patent documents.

7) On April 28, 2006 Applicant filed an amendment and response. The amendment amended a paragraph on Page 13, commencing on line 19 and added new Claim 58. The response addressed the issues raised in the November 30, 2005 Action (Item 5).

- 8) On June 14, 2006 counsel for the Applicant and the Examiner conducted an interview. No agreement was reached.
- 9) The instant Final Rejection issued on August 9, 2006.
- 10) Applicant filed a Response on 2/9/07. The Response requested reconsideration of the pending Rejections, Objections and Requirements, in light of the Applicant's arguments.
- 11) Per Examiner's request, an Interview was held on March 1, 2007. No agreement was reached.
- 12) Applicant filed an appeal on 2/9/07.
- 13) On 5/4/07 Applicant filed a Petition requesting relief from various Examiner Objections/Requirements.

**FIRST GROUND OF REJECTION:** The Specification and Claims 1-30 and 48-51 satisfy the requirements of 35 U.S.C. § 112, first paragraph (enablement).

This issue is also "intertwined" with a pending Petition to the Commissioner inasmuch as, the Examiner has incorrectly asserted non-enablement under 35 U.S.C. §112, paragraph one as a basis for a Requirement for a Substitute

Specification under 37 CFR 1.125(a). It is believed that an affirmative decision for the Applicant would obviate the pending Requirement.

Applicant requests that the §112 rejection to the Specification and Claims 1-30 and 48-51 be overturned as the Examiner has failed to carry the burden of proving *prima facie* case of non-enablement. Applicant appeals for at least the following reasons.

- i. Claims 1-30 and 48-50 were in the Application as originally filed and thus provide an enabling disclosure for that which is cited therein.

In the Final Action (below), the Examiner specifically noted that the claims at issue were being rejected.

32. Claims 1-30 and 48-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner submits that the specification and

*Final Action of 8/9/06, page 9.*

First, this rejection of Claims 1-30 and 48-51 is improper as Claims 1-30 and 48-51 were in the application as of the filing date (with some amendment to Claims 1, 16, and 48). Due to the claim's inclusion as of the filing date, the claims themselves would form a basis of an enabling disclosure. *M.P.E.P. §2164* and *35 U.S.C. §112, paragraph two*. For this reason an "interfacing layer" (asserted as missing at Page 10, Paragraph 38) is at least disclosed in as filed Claim 1, which

recites “an interfacing layer to interface the problem-solving logic layer with one or more resources so that the execution models may utilize the resources when processing the client requests.” This assertion of a missing “interfacing layer” is without merit as Claim 10 further recites wherein the “interfacing layer” comprises a data abstraction layer and a data coordination layer.

This is to say, that while a claim may be invalid if not properly enabled within the specification, the only deficiency, if one were to exist, for arguments sake, is with the disclosure and not the claims themselves as the Examiner has failed to indicate how the claims at issue would not enable themselves.

Additionally, the Examiner has failed to follow the guidance in *M.P.E.P.* §2164.04 which states, “[b]efore any analysis of enablement can occur, it is necessary for the examiner to construe the claims.” The record evidences that the Examiner did not do this because one reading Claim 10 would be informed that a further feature of an “interface layer” was that the layer would include a data abstraction layer and a data coordination layer both of which are extensively discussed in the written description.

ii. The Examiner has failed to properly determine the level of one of ordinary skill in the art.

Perhaps, the most telling example of how the Examiner has failed to properly apply 35 U.S.C. §112, paragraph one may be best shown in the Final Rejection (below), wherein the Examiner’s “telephone closet” analogy fails to

note that 35 U.S.C. §112, paragraph one, as with §§102 and 103, is viewed from the perspective of one of ordinary skill in the art.

to implement the technical disclosure. A broader, over simplified analogy could be made to a person who has been given a detailed schematic of a telephone wiring closet without saying why it is there, what the telephone wiring closet actually is, or how it can be used to connect telephones so people can talk to each other over them. That person would then be able to read and understand the schematic, but would suffer an unreasonable burden in attempting to grasp what the intention is of the device described in the schematic and then once the intention was discovered would suffer yet another unreasonable burden in actually deciding how the invention could be applied to various environments and implementing the invention to fit that inferred application.

*Final Action of 8/9/06, page 9.*

While the Examiner admits that the example is “oversimplified”, this passage shows that the Examiner has not applied the correct standard for enablement because the Examiner has not determined the level of one of ordinary skill in the art as required under the Wands Factors. *M.P.E.P.* §2164.01(a). Thus, while the average person on the street may not immediately recognize what the schematic discloses, one of ordinary skill in the art, reading the same schematic may know precisely the invention’s utility, novelty and understand how to make/use the invention. This is to say, an electrical schematic conveys volumes of information to an undergraduate electrical engineer that may not be apparent to a PhD in chemistry. The Examiner’s position does not go to the reasons for the uncertainty of the enablement but, instead presumes that the person would not know why the electrical closet exists or for what purpose the closet serves.

iii. The burden is on the Examiner to provide a factual rationale of why the as filed Specification fails to meet the enablement standard under 35 U.S.C. §112, *paragraph one* (then and only then does the burden shift to the Applicant to present rebuttal arguments).

The Examiner has failed to carry the burden of proving a *prima facie* case of non-enablement. When rejecting a claim under the enablement requirement of Sections 112, the [Patent Office] bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by the claim is not adequately enabled by the description of the invention provided in the specification of the application. . .” *In re Wright*, 999 F.2d 1557, 27 USPQ.2d 1510, 1513 (Fed Cir. 1993). The Examiner seemingly argues (below) that, because the Examiner cannot understand what the subject matter accomplishes then the disclosure must not be enabled, rather than attempting to lay out factual assertions or providing evidence buttressing a *prima facie* case of non-enablement.

nearly connected, to make and/or use the invention. The Examiner submits that the specification and claims go into great detail on the technical aspects of the invention. But the Examiner strongly believes that the invention cannot be enabled because the Examiner cannot ascertain what the invention is attempting to accomplish. The specification refers to various modules, which are swapped out to adapt

*Final Action of 8/9/06, page 9.*

In other words, instead of pointing out what ambiguity exists (such as by citing evidence) or citing a violated scientific principle (a reasonable basis), as is

required), the Examiner's position merely cites "beliefs" instead of evidence or factual findings. *M.P.E.P.* §2164.04. The Examiner "strong belief" that the subject matter is not enabled is without merit. The proffered basis for doubting enablement is without merit because the Application clearly states,

"[a] multi-layer software architecture permits efficient and timely construction of business processes and server-based software applications for many diverse domains, such as business-oriented domains like asset management, leasing and lending, inventory tracking, and so forth. The architecture is arranged into several hierarchical layers. An execution environment layer handles incoming requests from remote clients and selects the appropriate problem-solving logic to process the requests. The problem-solving logic is organized within a problem-solving logic layer that defines the application for a specific problem domain. For individual requests, the logic performs various series of tasks to process the requests and produce replies that will be returned to the clients. . . .

Any one of the layers may be removed, modified, or updated without impacting other layers. This allows the architecture to adapt easily to many different problem domains, to support many different types of client devices, to accommodate many different users in different regions and cultures of the world, and to interface with many diverse resources." *Application, Page 3, line 14-Page 4, line 10.*

In light of at least this disclosure, the Examiner argument has no basis in fact to bolster the Examiner's "strong belief".

iv. The Examiner has failed to provide a factual basis for why, at the time of the invention, one of ordinary skill in the art would have to conduct an undue number of experiments to make/use the invention or provide an objective reason why one of skill in the art would doubt the enablement of the specification as required under *M.P.E.P.* §2164.04.



While the Final Rejection does reference the Wands Factors (below), the rejection does not substantively address the factors. If we assume, for arguments sake, that a reason to doubt enablement exists, the Final Action merely recites conclusions/assertions without showing how the purported ambiguity renders the Application non-enabled. The burden is on the Examiner to prove a case of non-enablement under 35 U.S.C. §112, paragraph one rather than on the Applicant to disprove assertions or conclusions. *M.P.E.P.* §2164.04.

35. Several factors are considered when determining whether sufficient evidence to support a determination that a disclosure is enabled are presented in MPEP 2161.01(a). Four of those factors from *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) are found to be lacking.

36. The breadth of the claims: Applicant failed to provide information in the specification to allow one of ordinary skill in the art to ascertain the scope of the claims. The "domain" definition provided by the specification is never matched with the "problem domains" claimed.

37. The nature of the invention: Applicant failed to provide information in the specification to allow one of ordinary skill in the art to understand the nature of the invention.

38. The amount of direction provided by the inventor: Applicant failed to provide direction to allow one of ordinary skill in the art to understand how to implement the invention by failing to relate the invention to fields of art known to one of ordinary skill. For example, Applicant never included content relating to an interfacing layer in the originally filed specification. This failure immediately calls into question whether the disclosure when filed contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention based on the test of enablement in MPEP 2164.01.

39. The quantity of experimentation needed to make or use the invention based on the content of the disclosure: Applicant failed to define multiple terms in the claims. Applicant did not provide any assistance in understanding the layering in the invention or the scope of the domains. One of ordinary skill in the art would suffer the burden of undue experimentation in understanding and implementing the invention based upon the amount of material lacking within the specification as originally filed.

*Final Action of 8/9/06, pages 10-11.*

In the instances in which the Examiner does recite potential rationales (Items 36 and 38), the Examiner fails to carry the burden of showing why these items are a problematic. Terms of a claim carry “their ordinary meaning, unless it appears that the inventor used them differently.” *Gargoyles Inc. v. United States* 28 USPQ 2d 1715, 1716-17 (Fed. Cir. 1993). For example, instead accepting a plain meaning of term “problem” “domain” as a domain having a problem (as argued by the Applicant), in Item 38 (above), the Examiner merely asserts the factor is not met and then moves on.

Considering Item 38, there is no problem finding variations of the term “interface” as this term appears at least 34 times in the Written Description. This includes references describing “layers” and “interface” at *Application, Page 3, line 27; Application, Page 10, line 19; Application, Page 12, line 1; Application, Page 12, line 11; Application, Page 13, line 4;* and so on. Also, quite notably, the term “interface layer” appears in Claim 10. Claim 10 states (emphasis added),

“A server system as recited in claim 1, wherein the **interfacing layer** comprises:

a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and

a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data.”

Additionally, the Examiner's own arguments contradict the Examiner's position as to the direction provide by the inventor. Applicant directs the Board's attention to the Final Action, Page 9 (below), wherein the Examiner states, that the specification and claims "go into great detail". Apparently, the Examiner would have us believe that there is too much detail in one instance and then have us believe that this "great detail" fails to "provide direction to allow one of ordinary skill in the art to understand how to implement the invention."

nearly connected, to make and/or use the invention. The Examiner submits that the specification and claims go into great detail on the technical aspects of the invention. But the Examiner strongly believes

*Final Action of 8/9/06, page 9.*

The Examiner has not provided objective reasons/evidence for doubting the enablement of the Application. Specifically, Items 37 does not provide a rationale why one of ordinary skill in the art could not understand the disclosure, but instead merely recites the conclusion. For example, the Examiner has failed to indicate what teaching is missing. In the end, in-lieu of providing substantive rationale which the Applicant may rebut, the Examiner merely asserts that four (out of eight) of the Wands factors, and presents some rationale in (perhaps) three out of four of the proffered Wands factors.

Accordingly, claims 1-30 and 48-51 and the Specification satisfy the requirements of 35 U.S.C. § 112, paragraph one and therefore it is respectfully requested the rejection of these claims be overturned. Additionally, the

Requirement for a Substitute Specification under 37 CFR 1.125(a) is improper and should be obviated in light of the Boards decision in regards to 35 U.S.C. §112, paragraph one. Additionally, the Examiner's citation of 37 CFR 1.125(a) is improper as the section merely authorizes the following,

“If the number or nature of the amendments or the legibility of the application papers renders it difficult to consider the application, or to arrange the papers for printing or copying, the Office may require the entire specification, including the claims or any part thereof, be rewritten.” 37 CFR 1.125(a)

2. **SECOND GROUND OF REJECTION:**

Claims 1-30 and 48-51 satisfy the requirements of 35 U.S.C. § 112, second paragraph.

Applicant requests that the §112 rejection to Claims 1-30 and 48-51 be overturned as the Examiner has failed to carry the burden of proving *prima facie* case indefiniteness under 35 U.S.C. §112, paragraph two. Applicant appeals for at least the following reasons.

i. The Examiner has ignored the plain meaning of the claim terms. In the Final Action the Examiner rejected the at issue claims under the following basis,

1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). With regard to claims 1-53, Applicant has freely acted as his own lexicographer. Applicant has used multiple terms that are not well known in the art and the Examiner has not encountered satisfactory definitions for said terms within the specification or within the prior art, including multiple technical and computer dictionaries, as to clear up this deficiency. The

*Final Action of 8/9/06, page 11.*

In other words, the Examiner would have us believe that the Applicant is acting a lexicographer (one who provides definitions) and to prove the Examiner's position, the Examiner asserts that no definitions are given in the Specification. This argument is circular because by "definition" a lexicographer must provide "definitions" or else they are not a lexicographer. This type of argument is akin to the story of the person, in North America, who upon hearing hoof-beats presumes that a herd of zebras is about, instead of horses. In this case, the Examiner has failed to apply the presumptively correct plain meaning of the claim terms. Additionally, the Examiner has failed to construe the claim terms and instead asks that the Applicant construe the claim terms (below).

4. Until Applicant is willing to clarify on the record what the invention actually is for the Examiner, no reasonable search of the prior art can be undertaken. Several Senior Examiners have been consulted within the Office in an attempt to clarify the invention, which is evidence contrary to Applicant's assertion on page 31 of the remarks that "others were not similarly stymied by the kind of exposition provided by the present application. This observation has at least a bearing on how the present application would be

*Final Action of 8/9/06, page 2.*

Thus, rather than construing the claims broadly and presenting a *prima facie* case that the as understood definition is indefinite in accordance with *M.P.E.P.* §2173.05(a), or that an alternate definition exists, the Examiner merely asserts that the Applicant is acting as a lexicographer and ask the Applicant to provide definitions. For example, instead of using the plain meaning of the term "interfacing layer" as a layer, or a thickness or course, that interfaces or interacts at a boundary and then looking to the claims that depend from Claim 1 to see if the

genius of “interfacing layer” is further described, the Examiner merely states that the term is indefinite. If the Examiner had properly construed the claim term, the Examiner would have been apprised that (with respect to Claim 1) Claim 10 further recites that an “interfacing layer”

comprises:

a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and  
a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data.

With this inherent definition (although in a narrower form) , the Examiner could have found that the written description discussed interfacing layer at least page 12, line 1 to page 13, line 24. In the alternative, the Examiner could have used the “Exemplary and Non-limiting Support for Claims in Specification” provided with the Response filed 4/28/06.

Instead, the Examiner merely selected to hold both Claims 1 and 10 indefinite. In much the same vein, as 35 U.S.C. §112, paragraph one, the Applicant is not obliged to disclose definitions for instances in which the plain meaning of terms follow idiomatic American English as would be understandable to one of ordinary skill in the art. This process is greatly hampered by the fact that the Examiner did not establish the characteristics of one of ordinary skill in the art.

The Examiner's argument is false as the position ignores the plain meaning of the claim terms (as argued by the Applicant) in-favor of hidden definitions which are 1) not present in the Specification or 2) not in "unspecified" "multiple technical and computer dictionaries". The Examiner's position ignores the fact that the plain meaning of the term is intended, and thus no definition is necessary. At no time has the Examiner asserted that the Applicant seems to be using a word in a contradictory manner from the word's standard American English meaning, e.g., "up" in place of "down", "black" in place of "white." The Examiner's position fails to provide a rationale why the term is used in a non-standard way or even what is the applicable level of one of ordinary skill in the art.

Applicant is at a loss to combat an Examiner's un-cited assertion that a definition does or does not exist in an unnamed "multiple technical and computer dictionaries". *Final Action of 8/9/06, page 11*. Applicant is similarly at a loss to rebut the unsubstantiated reference to the consultation of "Several Senior Examiners" in the Final Office Action page 2 (above) as the Examiner has failed to provide affidavits under 37 C.F.R. 1.104(d)(2) from these "Several Senior Examiners"

The Examiner goes on to cite (by counsel's count) 42 terms and phrase (below) with which the Examiner takes issue. As the Examiner's position did not specifically state which claims were being rejected, it is believed that no separate recitation of each dependent claim is due in the Summary of Claimed Subject Matter section.

prior art, including multiple technical and computer dictionaries, as to clear up this deficiency. The following are some of the terms that the Examiner has encountered within the claims that are not well known in the art, but this list is not meant to be limiting in that regard: multi-layer application, problem-solving logic layer, problem domain, execution model, execution environment layer, interfacing layer, framework, model dispatcher, request dispatcher, interaction-based model, interaction definitions, command model, action-view model, use case model, data abstraction layer, data coordination layer, domain framework, application data manager, application solution space, layout of individual replies, presentation theme, presentation module, rendering module, constraint system, hierarchy of constraint layers, constraint hierarchy, constraint resolver, legally mandated constraints, company-mandated constraints, cultural constraints, cultural aspects, low-level security rules, high-level permission concepts, form processor, form definition, resource bundle, locale-specific content, locale, resource bundle manager, locale-independent core, locale-sensitive content, computer-servable document. The terms are indefinite because the specification does not clearly define the terms to the extent required by the Examiner in order to allow one of ordinary skill in the art to reasonably understand the specification and invention with ease and clarity.

*Final Action of 8/9/06, pages 11-12.*

Taking the first phrase “multi-layer application” the Final Action fails to apply the plain meaning of the phrase (such as a computer type program having multiple layers or levels) but instead merely states the claim terms do not meet the Examiner’s subjective satisfaction (what the Examiner thinks one of ordinary skill in the art would know).

manager, locale-independent core, locale-sensitive content, computer-servable document. The terms are indefinite because the specification does not clearly define the terms to the extent required by the Examiner in order to allow one of ordinary skill in the art to reasonably understand the specification and invention with ease and clarity.

*Final Action of 8/9/06, pages 11-12.*



Applicant respectfully asserts that the remaining claim terms utilize plain ordinary meanings associated with the given words as understood by one of ordinary skill in the art. Further, the Examiner's determination is done without resolving the level of one of ordinary skill in the art, such as in a biotech area, asserting that the level of ordinary skill in the art is a person with a master's in biology and then go on to explain why a biotech term would not be understood by the "one of ordinary skill in the art"

While not obligated under prosecution guidelines, Applicants' reply of April 28, 2006, went so far as to include an "Exemplary and Non-limiting Support for Claims in Specification" Appendix cross-referencing claim terminology with portions of the written description.

ii. The Examiner's position is not supported on the record. The Examiner issued a Restriction Requirement (below) without any assertion that the claim terminology was indefinite. This rejection did not even attempt to equivocate on the definiteness of the claim terms, such as by asserting (hypothetically) "as best understood by the Examiner".

#### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-30 and 48-52, drawn to a multi-layer application executing on a computer with a problem-solving layer, classified in class 709, subclass 203.
  - II. Claims 31-47, drawn to a business-oriented computer software architecture with a business logic module, classified in class 705, subclass 39.
  - III. Claims 52-57, drawn to a method for creating server applications for multiple different domains, classified in class 717, subclass 106.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I, II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a multi-layer application executing on a computer with a problem-solving layer, but lacks a business logic module and creating server applications. Invention II has separate utility as a business-oriented computer software architecture with a business logic module, but lacks a problem-solving layer and creating server applications. Invention III has separate utility as a method for creating server applications for multiple different domains, but lacks a business logic module and a multi-layer application. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II and III, restriction for examination purposes as indicated is proper.
5. A telephone call was made to Lewis C. Lee on December 9, 2004 to request an oral election to the above restriction requirement, but did not result in an election being made.

#### ***Restriction of 12/21/04, page 3..***

Thus, the Examiner's present argument is inconsistent with the Examiner's own Restriction Requirement which was able to resolve 1) the separate utility, 2) the distinctiveness of the claims in the various groups.

Accordingly, claims 1-30 and 48-51 satisfy the requirements of 35 U.S.C. § 112, paragraph two (definiteness) and therefore it is respectfully requested the rejection of these claims be overturned.

3. **THIRD GROUND OF REJECTION:**

The drawings comply with 37 CFR 1.81(a) and are therefore in compliance with 35 U.S.C. §113, first sentence. Accordingly, the Objection of the drawings under 37 CFR 1.81(a) is improper. This matter is properly in front of this Board as the Examiner's Objection incorrectly implicates 35 U.S.C. §113 first sentence requiring drawings where "necessary" rather than drawings under 37 CFR 1.81(c).

The relevant portion of the Examiner's Final Action is reproduced below for the Office's convenience. As stated at Final Action, Page 7,

28. The drawings are objected to because, though the drawings are comprehensive in nature and cover multiple aspects of the invention, the drawings still fail to convey to one of ordinary skill in the art what exactly is being accomplished by the invention. The closest drawing that the Examiner feels is to showing the actual usage of the invention, which is still unclear, is Figure 20, which shows a login prompt on a web page and a human translator. Even with these two items present in Figure 20, and the descriptions given for this and all other submitted drawings, the Examiner is not assisted in grasping the invention at all based upon the currently submitted drawings. Applicant is reminded of the necessary compliance with 37 CFR 1.81(a), which states *The applicant for a patent is required to furnish a drawing of his or her invention where necessary for the understanding of the subject matter sought to be patented; this drawing, or a high quality copy thereof, must be filed with the application. Since corrections are the responsibility of the applicant, the original drawing(s) should be retained by the applicant for any necessary future correction.* [Emphasis added by the Examiner.] Corrected drawing

i. As the drawings have not been omitted, the Objection under 37 CFR 1.81(a) is improper.

The Examiner incorrectly contends that the basis of the drawing objection lies in "37 CFR 1.81(a)". The Examiner is incorrect because as discussed in

M.P.E.P. § 608.02 (III) “[a] drawing will be considered *necessary* under the first sentence of 35 U.S.C. §113 in all applications where the drawing is referred to in the specification and one or more figures have been omitted.” Emphasis added. Thus, the Examiner has ignored the Office’s own understanding of 35 U.S.C. §113, first sentence by invoking 37 CFR 1.81(a), which mirrors the first sentence of 35 U.S.C. §113. As the Examiner has not asserted that drawings are omitted, the citation of 37 CFR 1.81(a) and by implication 35 U.S.C. §113, first sentence is improper.

ii. The record supports the Applicant’s position regarding the necessity of drawings under 37 CFR 1.81(a) and by implication 35 U.S.C. §113.

As the Board is well aware, the Office of Initial Patent Examination (OIPE) makes initial decisions as to the applicability of 35 U.S.C. §113, first sentence and thus, decisions with regard to 37 CFR 1.81(a). By passing the Application on for examination, the OIPE determined that the drawings met 35 U.S.C. §113 and 37 CFR 1.81(a).

For arguments sake, if we presume the Examiner has correctly applied 37 CFR 1.81(a), the Examiner failed to follow proper procedures in M.P.E.P. § 608.02 (III) or, in the alternative, failed to cite a proper basis in M.P.E.P. § 608.02 (IV).

iii. The Examiner has failed to follow the Office’s guidance regarding the necessity of drawings as at least one of the claims at issue recites a method.

The Examiner has not followed the guidance in M.P.E.P. § 608.02 (III) which states “A drawing is not required for a filing date under 35 U.S.C. §§111 and 113 if the application contains; (A) at least one process claim including the term “process” or “method” in its introductory phrase;”

At least Claim 48, as filed, recited “A method”, so a drawing is not required in this case.

iv. The Examiner has failed to provide any rationale, legal or factual, why one of ordinary skill in the art cannot understand the drawings.

The Examiner’s contentions fail to provide any rationale, legal or otherwise, to bolster the Examiner’s position. The Examiner contentions failed to give a factual reason (beyond the drawings are too complete, see below) why the drawings are deficient. Instead, the Examiner position merely “jumps to the conclusion” that “the drawings still fail to convey to one of ordinary skill in the art what exactly is being accomplished by the invention” instead of laying a factual or legal basis for support the Examiner’s position under 35 U.S.C. §113 and 37 CFR 1.81(a). Thus, Applicant is only provided the following general assertion,

28. The drawings are objected to because, though the drawings are comprehensive in nature and cover multiple aspects of the invention, the drawings still fail to convey to one of ordinary skill in the art what exactly is being accomplished by the invention. The closest drawing that the Examiner feels is to “showing the actual usage of the invention, which is still unclear, is Figure 20, which shows a login prompt on a web page and a human translator. Even with these two items present in Figure 20, and the

*Final Action, Page 7.*

The Examiner has failed to provide any legal rationale (including a citation of applicable statute, rule or guidance) which would require the Applicant to furnish drawings based on the Examiner's subjective "feeling". Additionally, the Examiner's own statement indicating that the drawings are "comprehensive in nature and cover multiple aspects" (emphasis added) is inconsistent with the contention that the information does not convey information in accordance with 35 U.S.C. §113, first sentence and 37 CFR 1.81(a).

**com·pre·hen·sive** \kām-pri-'hen-siv\  
*adj* : covering completely or broadly <~  
insurance> — **com·pre·hen·sive·ly** *adv*  
— **com·pre·hen·sive·ness** *n*  
**com·press** \kam-'pres\ *vb* 1 : to squeeze

*Merriam Webster Dictionary: New Addition, Springfield, MA 148 (2004).*

Counsel for Applicant presumes that the first definition is intended as the "covering multiple aspects portion" of the sentence would be redundant.

Accordingly, the drawings satisfy the requirements of 35 U.S.C. § 113, first sentence and 37 CFR 1.81. Therefore, Applicant requests the Objection be obviated based on the determination that the drawings satisfy the requirements of 35 U.S.C. § 113, as the Examiner is required to cite more than a feeling to support a *prima facie* case under 37 CFR 1.81(a) and/or 35 U.S.C. §113, first sentence.

4. **FOURTH GROUND OF REJECTION:**

Claims 1-9, 12-16, 18-21, 23-24, and 48-51 satisfy the requirements of 35 U.S.C. § 102(b) and therefore are not anticipated by Stevens.

i.) Stevens fails to disclose a server having a multi-layer application including a problem solving logic layer, an execution environment layer, and an interfacing layer.

With respect to Claim 1, the difference in opinion between the Examiner and the Applicant is whether Stevens discloses a server having a multi-layer application. Applicant's position is that Steven does not disclose multiple layers, because the inetd daemon, included in a "superserver" is not described as having the three layers in addition to a "presentation layer" (i.e., a problem solving logic layer, an execution environment layer, and an interfacing layer, beyond a presentation layer) in which a change in one layer does not affect another layer as generally recited.

In contrast to the presently recited system, Stevens discloses an inetd daemon, which is a process which operates in the background. *Stevens*, Page 72. In a given example, an inetd daemon is a line printer process which waits for a specified period or until a specified event occurs. *Id.* A superserver is described which implements a single inetd daemon. *Stevens*, Page 335. In this way, the single inetd process waits to serve multiple requests instead of setting up a process for each potential service. *Id.* The inetd processes the initial requests prior to utilizing the server. *Id.* The inetd does this by executing a fork and exec. *Id.* A fork permits the parent to exit and allows the child process to continue to handle the daemon. *Stevens*, Pages 74, bottom of page to Page 75, top of page. In this manner, a request is handed off to the child for processing. *Stevens*, Pages 334

and 335. A presentation layer may be included to modify the representation to promote exchange. *Stevens*, Page 250.

The Examiner's final action fails to indicate how the inetd daemon could anticipate the present subject matter, as Stevens only describes a parent-child relationship and a presentation layer. As discussed by the Applicants above, the Stevens system does not anticipate the present claim because Stevens does not disclose "layers." Stevens has only 1) a parent, 2) a child in addition to a presentation layer, while Claim 1 in part recites 1) a problem solving logic layer, 2) an execution environment layer, 3) an interfacing layer, and a presentation layer.

ii. Stevens fails to disclose an application in which any of the layers may be changed without impacting other layers.

The Final Action fails to point out how the parent process and the child process, as disclosed in Stevens, meets the features recited in Claim 1. The pending rejection has failed to cite where Stevens discloses wherein any of the layers may be changed without impacting other layers or how inetd is capable of permitting layer changes without impacting the entirety of the inetd (asserted as being the execution environment layer, the interfacing layer, the problem-solving logic layer). *Instant Action*, Page 5, Paragraph 18. "Inherency. . . may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *In re Oelrich*, 666 F.2d



578,581, 212 USPQ 323, 326 (C.C.P.A. 1981) *citing Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (C.C.P.A. 1939). Emphasis added. Stevens does not address the issue of layer variation within the referenced excerpts. In Stevens, the parent process cannot be changed without impacting the child, as the child process inherits a configuration file passed from the parent. *Stevens*, Page 238. Additionally, a daemon process inherits its file access creation mask from its parent. *Stevens*, Page 74, Paragraph “Reset the File Access Creation Mask.” In this manner, the parent and child are intertwined, such that a change within the parent impacts the child.

iii. **Claims 2-9, 12-16, 18-21, 23-24** depend either directly or indirectly from Claim 1 and are allowable as depending from an allowable base claim, as well as for their own recited features. Each of these claims depends from Claim 1 and is therefore allowable for reasons discussed with respect to Claim 1. These claims are also allowable for their own recited features which, in combination with those recited in Claim 1, are not disclosed in the references of record.

iv. **Claim 20** is allowable based on its dependence from Claim 1. Claim 20 additionally recites features which are not disclosed in the art of record. Claim 20 in part recites a constraint system to constrain operation of the multi-layer application . . . comprising a hierarchy of constraint layers . . . with each constraint layer containing a set of one or more constraints that customize operation of the multi-layer application. In the previous Responses, Applicant argued that,

“Stevens does not disclose or suggest a constraint system that constrains the operation of a multi-layer application, where the constraint system is comprised of a hierarchy of constraint layers.” The Final Action identifies Steven’s configuration file (disclosed on pages 335-336) as having a bearing on this feature. However, the configuration file merely specifies the services that the superserver is to listen for and what to do when a service request arrives. It does not comprise a *hierarchy* of constraints. *Response 4/28/06, Page 41.*

In the Final Action, Page 5, Paragraph 20 (reproduced below) the Office merely asserts a hierarchy of constraints and customization is disclosed without citing any portion of the reference for this teaching, as is required. Stevens fails to disclose a hierarchy of constraints, either at pages 335-336 or anywhere else. The cited passage from Stevens is limited to discussing establishing the inetd daemon, which includes a list of fields. *Stevens*, Pages 335. This `/etc/inetd.conf` file is simply a list of services that the superserver is to listen for, rather than establishing a hierarchy of constraint layers. *Id.* In each case, the superserver waits until one of the requests arrives, rather than establishing a hierarchy of services. In this way, the superserver may be triggered by any of the requests and does not utilize a hierarchy. Instead, Stevens discloses a list of requests which can trigger the superserver. As a *prima facie* case of anticipation has not been shown, reversal of the pending rejection is requested.

20. In regard to claim 20, Stevens has disclosed a *hierarchy of constraints*, given the broadest reasonable interpretation of the claim language per MPEP 2111.01. Customization is taught throughout Stevens.

*Final Action, Page 5.*

v. **Claim 48** recites in part, a method generally including “receiving requests from multiple clients, the requests being related to a business-related problem domain, wherein the business-related problem domain pertains to a particular category of business-related service”, “retrieving the data from one or more external resources and mapping the data to a domain framework for the business-related problem domain, the domain framework being independent from the problem-solving logic” and “wherein a new business-related problem domain can be exchanged for a previous business-related problem domain by replacing one or more components of the system, without having to reconstruct an entire application solution for the new business-related problem domain.” Steven fails to teach the recited features for at least the following reasons.

As discuss generally with respect to Claim 1 (above), the Stevens superserver system does not disclose replacing one or more components of the system without having to reconstruct an entire application. In Stevens, the parent-child process relationship is such that the child inherits its file access creation mask and configuration file from the child process’ parent. In this way, a replacement of the parent impacts the child.

Stevens also fails to teach business-related problem domains. The Stevens reference does not address the feature of a “business-related” problem or a “particular category of business-related service.” Examples of business domains include, but are not limited to, financial management, asset repair, or inventory tracking domains. *Instant Application*, Page 6, lines 5-14. “An anticipating reference must describe the patented subject matter *with sufficient clarity and detail* to establish that the subject matter existed and that its existence *was recognized by persons of ordinary skill in the field of invention.*” *ATD Corp.v. Lydall, Inc.*, 48 USPQ.2d 1321,1328 (Fed. Cir. 1998) citing *In re Spada*, 15 USPQ.2d 1655, 1657 (Fed. Cir. 1990). Emphasis added. Stevens fails to meet the requirements, as the reference does not teach “business-related problem domain” or replacing one or more components . . . without having to reconstruct and entire application solution.

vi. Claims 49-51 depend either directly or indirectly from Claim 48 and are allowable as depending from an allowable base claim, as well as for their own recited features. Each of these claims depends from Claim 48 and is therefore allowable for reasons discussed with respect to Claim 48. These claims are also allowable for their own recited features which, in combination with those recited in Claim 48, are not disclosed in the references of record.

For at least the foregoing reasons, Claims 1-9, 12-16, 18-21, 23-24, and 48-51 satisfy the requirements of 35 U.S.C. § 102(b) and therefore are not anticipated by Stevens. Accordingly, it is respectfully requested that the second ground of rejection be overturned.

5. **FIFTH GROUND OF REJECTION:**

Claims 10, 11, 17, 22, 25-30 and 58 satisfy the requirements of 35 U.S.C. § 103(a) and therefore are not rendered obvious by the below combinations. While the Supreme Court's recent *Teleflex Decision* modified the *Teaching, Suggestion, Motivation Test* away from a rigid rule, the Court's decision did not change settled law that the Examiner must provide a rationale for why one of ordinary skill in the art, at the time of the invention, would have made the proposed substitution, as well as meeting the all elements rule. *KSR International Co. v. Teleflex*, 550 U.S. unknown, 04-1350, 14 (2007). As discussed below, the Examiner has failed to meet the requirements for establishing a *prima facie* case of obviousness including the motivation to combine.

i. The Examiner has failed to meet the all elements requirement embodied in 35 U.S.C. § 103(a) and has failed to state a motivation to combine sufficient to meet the requirements under the law. Claims 10, 11, and 58 are rejected over Stevens in view of Gilley.

While **Claim 10**, is indicated as pending a rejection over Stevens in view of Gilley, the text of Paragraph 21, Page 5, the "Response to Arguments" section of the final action rejecting Claim 10 is directed to asserting the specification lacked

a sufficient disclosure of an “interfacing layer.” Applicants disagree. While addressed above, an “interfacing layer” is at least discussed generally at Page 3, line 20 through Page 4, line 10, as well as, Page 12 through line 24. Moreover, while paragraph 21 discloses that a broad interpretation will be used, the Office fails to state how the cited references make the subject matter of Claim 10 obvious. Neither of the references teach or suggest an interfacing layer including a data abstraction layer and a data coordination layer as claimed. Additionally, paragraph 71, discussing Claims 10-11 fails to provide any citation of either a data abstraction layer or a data coordination layer or evidence supporting a motivation to combine.

71. Regarding claims 10-11, Stevens is applied as in claim 1. Stevens fails to disclose data conversion. However, Gilly discloses methods of converting data in the UNIX system. See Gilly, 10-1 – 11-11. It would be obvious to one of ordinary skill in the art to convert data in order to allow various server processes to accept the requests as specifically required by the preexisting server processes. By this rationale claims 10-11 are rejected.

*Final Action, Page 17.*

As the Supreme Court noted in the recent *Teleflex* decision, “[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR International Co. v. Teleflex*, 550 U.S. unknown, 04-1350, 1 14 (2007).

As a *prima facie* case of obviousness has not been shown with respect to Claims 10 and 11, reversal of the pending rejection is requested.

The pending rejection under 35 U.S.C. § 103(a) to **Independent Claim 58** should be reversed as the Examiner has failed to establish a *prima facie* case of obviousness over Stevens in view of Gilly. The entirety of the Examiner's rejection specifically directed to Claim 58 (under 35 U.S.C. § 103(a)) appears in paragraph 72 which cites,

72. Claim 58 contains the same substantive language as claims 1 and 10.

*Final Action, Page 17.*

Applicant disagrees. First, the Examiner has failed to prove a *prima facie* case of obviousness because Stevens system does not teach "layers." Stevens has only 1) a parent, 2) a child, in addition to a presentation layer, while Claim 58 in part recites 1) a problem solving logic layer, 2) an execution environment layer, 3) an interfacing layer (comprising a data abstraction layer and a data coordination layer), and a presentation layer. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Ryoka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). *See also In re Wilson*, 165 U.S.P.Q. 494 (C.C.P.A. 1970)

Moreover, the Examiner's rejection fails to lay out a *prima facie* case of obviousness, as the Board is well aware, the examiner "ordinarily should reject each claim on all valid grounds available." *M.P.E.P. §707.07(g)* Further, "[w]here a major technical rejection is proper, it should be stated with a full development of

reasons rather than by a mere conclusion coupled with some stereotyped expression.” *Id.* ). As a *prima facie* case of obviousness has not been shown with respect to Claim 58, reversal of the pending rejection is respectfully requested.

iii. The Examiner has failed to meet the all elements requirement embodied in 35 U.S.C. § 103(a) and has failed to state a motivation to combine sufficient to meet the requirements under the law with respect to Claim 17. Claim 17 is pending a 35 U.S.C. § 103(a) rejection over Stevens in view of Official Notice.

**Claim 17** in part recites,

wherein the presentation layer comprises:

- a presentation module to determine how the replies will appear on the client devices to users; and
- a rendering module, separate from the presentation module, to determine how to render the replies on the client devices.

In the case of Claim 17, the Examiner has not cited Official Notice for the missing layers, thus as discussed with regard to Claim 1 under 35 U.S.C. §102(b), Stevens fails to show 1) a problem solving logic layer, 2) an execution environment layer, 3) an interfacing layer, and a presentation layer. Stevens only discloses 1) a parent, 2) a child, in addition to a presentation layer.

Additionally, the Examiner has failed to proffer Official Notice as correcting the failure of Stevens to teach “wherein any of the layers may be



changed without impacting other layers”. As Stevens teaches a parent process-child process, the parent process cannot be changed without impacting the child, as the child process inherits a configuration file passed from the parent. *Stevens*, Page 238. In this manner, the parent and child are interconnected, so that a change within the parent will impact the child. This is in contrast to Claim 17, which due to its dependency on Claim 1, discloses, “wherein any of the layers may be changed without impacting other layers.”

More particular to Claim 17, Examiner has failed to assert that one of skill in the art would have known to bifurcate a presentation layer into a presentation module and a separate rendering module. This is to say, that there has been no showing that one of skill in the art would have known to have a presentation layer including a presentation module and a rendering module, separate from the presentation module and a motivation to do so. Additionally, the Examiner has failed to provide any evidence for the imposition of Official Notice or for a motivation to combine. Applicants challenged the Office’s application of Official Notice in Applicant’s Reply of September 12, 2005, Pages 35 & 36.

In regards to Claim 17, the Examiner has failed to elaborate a rationale sufficient to meet the Supreme Court’s guidance. As the Court noted, “[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR International Co. v. Teleflex*, 550 U.S. unknown, 04-1350, 1 14 (2007).

67. In regard to claim 17, Stevens is applied as in claim 1. Stevens discloses a *presentation module to determine how the replies will appear on the client devices to users*. See Stevens, 250. Stevens fails to disclose a rendering module, otherwise known in the art as a program to assist in displaying

information. However, Official Notice is taken that displaying information on a screen has been well known in the art for decades. It would be obvious to one of ordinary skill in the art at the time of the invention to display the information from a computer request on a screen so a user could see the results of the computer request. By this rationale claim 17 is rejected.

*Final Action, Page 16-17.*

In the present instance, the Examiner has failed to provide evidence of the existence of a rendering module, separate from the presentation module, and evidence of the motivation to make this combination. Thus, while the Examiner may cite the common sense of one of ordinary skill in the art at the time of the invention, there must be some evidence supporting the Examiner's assertion. As a *prima facie* case of obviousness has not been shown, reversal of the pending rejection is requested.

iii. The Examiner has failed to meet the all elements requirement embodied in 35 U.S.C. § 103(a) and has failed to state a motivation to combine sufficient to meet the requirements under the law with respect to **Claim 22**. Claim 22 is pending a 35 U.S.C. § 103(a) rejection over Stevens (alone).

While the Examiner is correct that Stevens fails to teach all the features of Claim 22, the Examiner is incorrect that 1) there is motivation to look beyond

Stevens and 2) the recited features are within the knowledge of one of ordinary skill in the art. First, the Examiner has failed to cite the knowledge of one of ordinary skill in the art as correct the following deficiencies in Stevens 1) a problem solving logic layer, 2) an execution environment layer, 3) an interfacing layer, and a presentation layer. Stevens only discloses 1) a parent, 2) a child, in addition to a presentation layer.

Stevens fails to teach or suggest wherein any of the layers may be changed without impacting other layers or how inetd is capable of permitting layer changes without impacting the entirety of the inetd (asserted as being the execution environment layer, the interfacing layer, the problem-solving logic layer). “[I]t is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.” *In re Lahu*, 747 F.2d 703, 223 USPQ 1257, 1258 (Fed. Cir. 1984). In the present case, as the knowledge of one of ordinary skill in the art is not cite as correcting this deficiency a *prima facie* case of obviousness does not exist as not all the elements have been shown.

Additionally, Stevens fails to teach or suggest a hierarchy of constraints, either at pages 335-336 or anywhere else. Stevens is limited to discussing establishing the inetd daemon, which includes a list of fields. *Stevens*, Pages 335. This /etc/inetd.conf file is simply a list of services that the superserver is to listen for, rather than establishing a hierarchy of multiple constraint layers. *Id.* In each case, the superserver waits until one of the requests arrives, rather than

establishing a hierarchy of services. In this way, the superserver may be triggered by any of the requests and does not utilize a hierarchy. Instead, Stevens discloses a list of requests which can trigger the superserver. As a *prima facie* case of obviousness has not been shown, reversal of the pending rejection is requested.

iii. The Examiner has failed to meet the all elements requirement embodied in 35 U.S.C. § 103(a) and has failed to state a motivation to combine sufficient to meet the requirements under the law with respect to **Claims 25-28**.

Claims 25-28 are pending a 35 U.S.C. § 103(a) rejection over Stevens in view of Peek. **Claims 26-28** depend from Claim 25 and are allowable as depending from an allowable base claim, as well as for their own recited features. Each of these claims depends from Claim 25 and is therefore allowable for reasons discussed with respect to Claim 25. These claims are also allowable for their own recited features which, in combination with those recited in Claim 25, are not disclosed in the references of record.

For the Board's convenience, the entirety of the Examiner's rejection is reproduced below. For expediency, Applicant presumes the Examiner is referencing Claim 25-28 in paragraph 25 although not specifically noted.

73. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens and Peek (Unix Power Tools).

74. Regarding claims 25-28, Stevens is applied as in claim 1. Stevens fails to disclose a method for handling data forms. However, Peek discloses a UNIX tool that allows for handling a data form and receiving the information from that form. Peek, 875-879. It would be obvious to one of ordinary skill in the art to use the form capabilities of Peek with the teachings of Stevens to allow a user to input data easily. By this rationale claims 25-28 are rejected.

*Final Action, Page 17.*

25. In response to Applicant's arguments concerning the Peek reference, Peek disclosed the limitations claimed by Applicant. Applicant has addressed the additional functionality of the claims but has not addressed it with regard to the Peek reference.

*Final Action, Page 6.*

The combination of Stevens in view of Peek fails to teach the recited subject matter because Peek is not cited as correct the deficiencies in Stevens with respect to the multiple layers and the feature of “wherein any of the layers may be changed without impacting other layers”, as discussed above.

Moreover, Peek fails to teach “a form processor to generate a data input form for the multi-layer application by automatically adding, to a form definition that defines the data input form, validation code to validate subsequent inputs to one or more fields of the data input form.” (Claim 25)

Peek is directed to filling in a form by adding a person's name, address, phone number, etc. *Peek*, Pages 875-876. The Peek reference fails to teach a system in which data input is generated from a multi-layer application to define

the data input form, or validation code to validate subsequent inputs. Peek does not disclose these teachings because Peek is directed to “filling in forms” rather than addressing defining data input forms or validating subsequent inputs. As Peek does not correct the deficiency in Stevens, at least with respect to defining data input forms and validating subsequent inputs, the asserted combination does not teach each and every limitation which is required for a *prima facie* case of obviousness to exist. Reversal of the pending rejection is requested.

iv. The Examiner has failed to meet the all elements requirement embodied in 35 U.S.C. § 103(a) and has failed to state a motivation to combine sufficient to meet the requirements under the law with respect to **Claims 29 and 30**.

Claims 29 and 30 are pending a 35 U.S.C. § 103(a) rejection over Stevens in view of Tuthill. **Claims 29 and 30** depend from Claim1 and are allowable as depending from an allowable base claim, as well as for their own recited features. These claims are also allowable for their own recited features which, in combination with those recited in Claim1, are not disclosed in the references of record. Reversal of the pending rejection is requested.

6. **SIXTH GROUND OF REJECTION:**

The Claims 20-25 are not within the aegis of Non-Statutory Double Patenting (provisional).

i. The pending provisional non-statutory double patenting rejection of Claims 1, 17, and 48-50 is improper as the cited claims in co-pending Application 09/845,752 (hereinafter, the '752 application) (presumed to be the basis as the claim language recited by the Examiner in comparison to co-pending Application 09/847,067 do not obviate the present claims) is directed to (in part) business software which was the subject of a Restriction Requirement in the present Application.

If, for arguments sake, we accept the Examiners argument as correct, solely for the purposes of this issue, the Non-Statutory Double Patenting Rejection of Claims 1, 17 and 48-58 is incorrect as the Examiner has issued a Restriction Requirement in this case (below) which notes that business orientated software is separately recognized in the art. Thus, the Examiner is in essence attempting to impose a double patenting rejection on subject matter that was generally recognized as separately patentable under 35 U.S.C. §121 by this Examiner.

#### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-30 and 48-52, drawn to a multi-layer application executing on a computer with a problem-solving layer, classified in class 709, subclass 203.
  - II. Claims 31-47, drawn to a business-oriented computer software architecture with a business logic module, classified in class 705, subclass 39.
  - III. Claims 52-57, drawn to a method for creating server applications for multiple different domains, classified in class 717, subclass 106.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I, II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a multi-layer application executing on a computer with a problem-solving layer, but lacks a business logic module and creating server applications. Invention II has separate utility as a business-oriented computer software architecture with a business logic module, but lacks a problem-solving layer and creating server applications. Invention III has separate utility as a method for creating server applications for multiple different domains, but lacks a business logic module and a multi-layer application. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II and III, restriction for examination purposes as indicated is proper.
5. A telephone call was made to Lewis C. Lee on December 9, 2004 to request an oral election to the above restriction requirement, but did not result in an election being made.

Claim 1 of the '752 application, in part, recites "a business logic layer to process the client requests according to a particular business domain and produce replies to be returned to the clients in response to the client requests;" While withdrawn Claim 31 (both of these Claims are reproduced below), of the Instant application, in part, recites "a first business logic module to process the client



requests received by the framework according to an associated business purpose, the first business logic module generating replies corresponding to the client requests.” Reversal of the pending provisional Non-Statutory Double Patenting Rejection with respect to Claims 1, 17, and 48-50 is requested.

Claim 1 of the '752 Application	Withdrawn Claim 31 of the Instant Application
<p>A server system, comprising:</p> <ul style="list-style-type: none"> <li>one or more computers; and</li> <li>an application executing on the computers to handle client requests, the application comprising: <ul style="list-style-type: none"> <li>a business logic layer to process the client requests according to a particular business domain and produce replies to be returned to the clients in response to the client requests;</li> <li>a presentation layer separate from, but in communication with, the business logic layer to structure the replies in a manner that makes the replies presentable on different types of client devices according to a tag library containing pre-constructed tags for a variety of data formats; and</li> <li>a request dispatcher to structure a reply for service back to a client device, the request dispatcher being configured to access the tag library to obtain tags to structure the reply according to a particular data format.</li> </ul> </li> </ul>	<p>A business-oriented computer software architecture stored on one or more computer-readable media, comprising:</p> <ul style="list-style-type: none"> <li>a framework module to receive client requests from different client devices;</li> <li>a first business logic module to process the client requests received by the framework according to an associated business purpose, the first business logic module generating replies corresponding to the client requests;</li> <li>a presentation module to structure the replies produced by the first business logic module in a manner that makes the replies presentable on the client devices; and</li> <li>the business-oriented computer software architecture being reconfigurable to another business purpose by substituting a second business logic module for the first business logic module.</li> </ul>

Similarly, the pending obviousness double patenting rejection of Claims 20-25 is improper because,

1. The citation of two references, i.e., A (Application 09/847,037) in view of B (Application 09/845,752) (in the case of Claims 23 and 24), as the basis of an obviousness double patenting rejection is improper based on the rationale cited above with respect to Claim 1. While a citation to a second reference is not *per se* improper under the *M.P.E.P.* the necessity of a second reference to “fill-in” the missing subject matter between the “reference” claims and the claims at issue

indicate that the subject matter is discernibly different. The further citation of a total of four “references”, with respect to Claim 25, indicates that the same subject matter is not being claimed as four co-pending applications are needed to “cobble together” the same claimed invention. Additionally, the Examiner has failed to provide a motivation to combine all four of the co-pending applications such that the “same invention” is being claimed pursuant to establishing a Non-Statutory Double Patenting Rejection.

2. The applications upon which the rejection is based were filed on the same day as the present application and thus are not “art”, if the Office is attempting to reject the claims based on a 35 U.S.C. §§102(e) or 103(a) rationale. Additionally, as the applications were filed on the same date, there is very little risk of unjustified or improper timewise extension of the right to exclude that the Non-Statutory Double Patenting Doctrine was designed to address.

3. The Examiner has not established a *prima facie* case of “obviousness” akin to that for a 35 U.S.C. § 103(a) rejection including elaborating a motivation to combine the reference claims with the asserted secondary reference. *M.P.E.P.* §804. As the Supreme Court recently noted, “[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR International Co. v. Teleflex*, 550 U.S. unknown, 04-1350, 114 (2007).

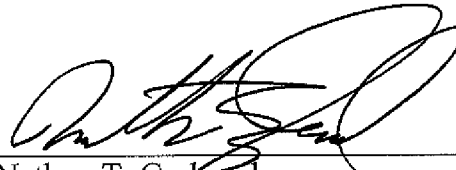
4. In the current situation the Office is attempting to reject claims in the application over combinations of disclosures in multiple applications. This methodology is improper because (1) the co-pending claims are not considered, instead the co-pending applications is applied as a secondary reference, and (2) as the rejection is based on multiple applications. Reversal of the pending Non-Statutory Double Patenting Rejection is requested.

### **Conclusion**

The Applicant respectfully considers this application to be in condition for allowance and respectfully requests the Board to overturn the final rejection and that the Examiner pass this application to allowance.

Dated this 7<sup>th</sup> day of Aug., 2007

Respectfully Submitted,



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## CLAIMS APPENDIX

1. A server system comprising:
  - one or more computers; and
  - a multi-layer application executing on the computers to handle client requests submitted by various client devices, the multi-layer application comprising:
    - a problem-solving logic layer to process the client requests according to an associated problem domain, wherein the problem domain pertains to a particular category of service, the problem-solving logic layer containing one or more execution models to perform various sets of tasks when processing the client requests, the problem-solving logic layer producing replies to the client requests;
    - an execution environment layer to receive the client requests and select an appropriate execution model in the problem-solving logic layer for processing the client requests;
    - an interfacing layer to interface the problem-solving logic layer with one or more resources so that the execution models may utilize the resources when processing the client requests; and
    - a presentation layer to receive the replies produced by the problem-solving logic layer and to structure the replies in a manner that makes the replies presentable on the various client devices,
- wherein any of the layers may be changed without impacting other layers.
2. A server system as recited in claim 1, wherein the execution environment layer comprises a framework to receive the client requests and route the requests to the problem-solving logic for processing.

3. A server system as recited in claim 2, wherein the execution environment layer comprises one or more adapters to interface the framework with different types of the client devices.

4. A server system as recited in claim 1, wherein the execution environment layer comprises:

a model dispatcher to route the client requests to selected execution models in the problem-solving logic layer; and

a request dispatcher to structure the replies for return to the client devices.

5. A server system as recited in claim 1, wherein the multi-layer application can be adapted to receive requests from new client devices with incompatible communication protocols by substituting a new execution environment layer that supports the new client devices.

6. A server system as recited in claim 1, wherein one of the execution models is embodied as a set of discrete program modules, each program module performing a specific task.

7. A server system as recited in claim 1, wherein one of the execution models is embodied as an interaction-based model in which computer programs are defined by a series of interaction definitions.

8. A server system as recited in claim 1, wherein the execution models are embodied according to at least one of a command model, an action-view model, and a use case model.

9. A server system as recited in claim 1, wherein one of the execution models performs tasks according to a first business purpose, and the multi-layer application being reconfigurable to achieve a different business purpose by installing another execution model that performs tasks according to the second business purpose.

10. A server system as recited in claim 1, wherein the interfacing layer comprises:

a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and

a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data.

11. A server system as recited in claim 10, wherein the data coordination layer comprises one or more application data managers that interface the domain framework in the data abstraction layer into an application solution space of the problem-solving logic layer.

12. A server system as recited in claim 1, wherein the multi-layer application can be adapted to access new resources by substituting in a new interfacing layer that supports the new resources.

13. A server system as recited in claim 1, wherein the client devices support different data formats, the presentation layer being configured to select appropriate data formats for encoding the replies.

14. A server system as recited in claim 1, wherein the client devices support different communication protocols, the presentation layer being configured to select appropriate communication protocols for delivering the replies to the clients.

15. A server system as recited in claim 1, wherein the presentation layer is configured to determine how to display the replies for a particular client.

16. A server system as recited in claim 1, wherein the presentation layer is configured to determine at least one of (1) a layout of individual replies, (2) display attributes in which to present the replies, and (3) a presentation theme.

17. A server system as recited in claim 1, wherein the presentation layer comprises:

a presentation module to determine how the replies will appear on the client devices to users; and

a rendering module, separate from the presentation module, to determine how to render the replies on the client devices.

18. A server system as recited in claim 1, further comprising an authentication module to authenticate the client devices or users of the client devices.

19. A server system as recited in claim 1, further comprising a constraint system to constrain operation of the multi-layer application according to a hierarchy of different constraints.

20. A server system as recited in claim 1, further comprising a constraint system to constrain operation of the multi-layer application according to multiple different constraints, the constraint system comprising a hierarchy of constraint layers, with each constraint layer containing a set of one or more constraints that customize operation of the multi-layer application.

21. A server system as recited in claim 1, further comprising:  
a constraint hierarchy of multiple constraint layers, each constraint layer containing a set of one or more constraints that constrain operation of the multi-layer application, the constraint layers being organized within the constraint hierarchy such that a first constraint layer limits a second constraint layer but the second constraint layer does not limit the first constraint layer; and



a constraint resolver to resolve the constraint layers so that operation of the multi-layer application is constrained by a set of the constraints in the constraint layers.

22. A server system as recited in claim 21, wherein the hierarchy of constraints comprises constraints selected from a group of constraints comprising:

legally mandated constraints to constrain operation of the multi-layer application according to legal principles;

company-mandated constraints to constrain operation of the multi-layer application according to preferences of a company that operates the application;

customer constraints to constrain operation of the multi-layer application according to preferences of customers;

cultural constraints to constrain operation of the multi-layer application according to cultural aspects; and

end user constraints to constrain operation of the multi-layer application according to preferences of an end user.

23. A server system as recited in claim 1, further comprising a security policy enforcement module to enforce security restrictions on accessing information stored at the one or more resources.

24. A server system as recited in claim 23, wherein the security policy enforcement module is to enforce the security restrictions based on a set of low-level security rules defined using high-level permission concepts.

25. A server system as recited in claim 1, wherein the presentation layer includes a form processor to generate a data input form for the multi-layer application by automatically adding, to a form definition that defines the data input form, validation code to validate subsequent inputs to one or more fields of the data input form.

26. A server system as recited in claim 25, wherein the form processor is to generate the data input form by identifying one or more custom tags associated with the data input form, to replace each of the one or more custom tags with another tag, and further to add to the form definition, for each of the one or more replaced tags, validation code to validate subsequent inputs to a field corresponding to the tag.

27. A server system as recited in claim 25, wherein the form processor is further to automatically identify one or more data input fields to be included in the form definition.

28. A server system as recited in claim 25, wherein the form processor is further to automatically identify one or more restrictions associated with a data input field of the data input form, and to determine the validation code based at least in part on the one or more restrictions.

29. A server system as recited in claim 1, further comprising:  
a resource bundle containing locale-specific content that is authored for a particular locale; and

a resource bundle manager to populate a locale-independent core with the locale-sensitive content in the resource bundle to produce a computer-servable document that can be served by the multi-layer application to the particular locale.

30. A server system as recited in claim 29, wherein the resource bundle manager resides in the interfacing layer.

Claims 31-47 are withdrawn.

48. A method for processing client requests in a system, comprising:

- receiving requests from multiple clients, the requests being related to a business-related problem domain, wherein the business-related problem domain pertains to a particular category of business-related service;
- processing the requests within problem-solving logic to produce replies within the business-related problem domain, the processing comprising requesting data to be used in formulating the replies;
- retrieving the data from one or more external resources and mapping the data to a domain framework for the business-related problem domain, the domain framework being independent from the problem-solving logic; and
- interfacing the problem-solving logic to the domain framework to obtain the data for use in processing the request,

wherein a new business-related problem domain can be exchanged for a previous business-related problem domain by replacing one or more components of the system, without having to reconstruct an entire application solution for the new business-related problem domain.

49. A method as recited in claim 48, further comprising structuring the replies for presentation to the clients.

50. A method as recited in claim 48, further comprising:  
structuring the replies to define how the replies will appear when presented at the clients; and  
independent of said structuring, conforming the replies to output capabilities of the clients.

51. A method as recited in claim 48, further comprising constraining how the replies are presented according to a hierarchy of constraints, wherein the hierarchy of constraints comprises multiple constraints such that a first constraint limits a second constraint but the second constraint does not limit the first constraint.

Claims 52-57 are withdrawn.

58. A server system comprising:  
one or more computers; and  
a multi-layer application executing on the computers to handle client requests submitted by various client devices, the multi-layer application comprising:  
a problem-solving logic layer to process the client requests according to an associated problem domain, wherein the problem domain pertains to a particular

category of service, the problem-solving logic layer containing one or more execution models to perform various sets of tasks when processing the client requests, the problem-solving logic layer producing replies to the client requests;

an execution environment layer to receive the client requests and select an appropriate execution model in the problem-solving logic layer for processing the client requests;

an interfacing layer to interface the problem-solving logic layer with one or more resources so that the execution models may utilize the resources when processing the client requests,

wherein the interfacing layer comprises:

a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and

a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data; and

a presentation layer to receive the replies produced by the problem-solving logic layer and to structure the replies in a manner that makes the replies presentable on the various client devices.

## **EVIDENCE APPENDIX**

None.

## RELATED PROCEEDINGS APPENDIX

None.

## Appendix A: Version of Exemplary and Non-Limiting Support for Claims in Specification provided 4/28/06

Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
1	A server system comprising: one or more computers; and a multi-layer application executing on the computers to handle client requests submitted by various client devices, the multi-layer application comprising:	at least page 6, line 24 to page 8, line 18	at least multi-layer architecture 110 implemented on one or more computers 112 that interact with various client devices 102
	a problem-solving logic layer to process the client requests according to an associated problem domain, wherein the problem domain pertains to a particular category of service,	at least page 10, line 25 to page 11, line 28; page 19, line 4 to page 33, line 1	at least business logic layer 204
	the problem-solving logic layer containing one or more execution models to perform various sets of tasks when processing the client requests, the problem-solving logic layer producing replies to the client requests;	at least page 11, lines 5-28; page 19, line 4 to page 33, line 1	at least one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
	an execution environment layer to receive the client requests and select an appropriate execution model in the problem-solving logic layer for processing the client requests;	at least page 9, line 22 to page 10, line 24	execution environment 202
	an interfacing layer to interface the problem-solving logic layer with one or more resources so that the execution models may utilize the resources when processing the client requests;	at least page 12, line 1 to page 13, line 24	note the various layers in Fig. 2 that serve at interfacing role, such as the data coordination layer 206 and the data abstraction layer 208
	and a presentation layer to receive the replies produced by the problem-solving logic layer and to structure the replies in a manner that makes the replies presentable on the various client devices,	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11
	wherein any of the layers may be changed without impacting other layers.	at least page 4, lines 6-10; page 6, lines 11-14; page 9, lines 11-21	note generally the layers of Fig. 2
2	A server system as recited in claim 1, wherein the execution environment layer comprises a framework to receive the client requests and route the requests to the problem-solving logic for processing.	at least page 10, lines 1-17	at least framework 220
3	A server system as recited in claim 2, wherein the execution environment layer comprises one or more adapters to interface the framework with different types of the client devices.	at least page 10, lines 18-24	at least adapters 228
4	A server system as recited in claim 1, wherein the execution environment layer comprises: a model dispatcher to route the client requests to selected execution models in the problem-solving logic layer; and	at least page 10, lines 6-17	at least model dispatcher 222
	a request dispatcher to structure the replies for return to the client devices.	at least page 10, lines 6-17	at least request dispatcher 224
5	A server system as recited in claim 1, wherein the multi-layer application can be adapted to receive requests from new	at least page 4, lines 6-10; page 6, lines 11-14; page 9, lines 11-21	note generally the layers of Fig. 2, and particularly the role of the execution environment layer 202



Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
	client devices with incompatible communication protocols by substituting a new execution environment layer that supports the new client devices.		
6	A server system as recited in claim 1, wherein one of the execution models is embodied as a set of discrete program modules, each program module performing a specific task.	at least page 11, lines 5-28; page 19, line 4 to page 33, line 1	at least one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
7	A server system as recited in claim 1, wherein one of the execution models is embodied as an interaction-based model in which computer programs are defined by a series of interaction definitions.	at least page 11, lines 5-28; page 19, line 4 to page 33, line 1	at least one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
8	A server system as recited in claim 1, wherein the execution models are embodied according to at least one of a command model, an action-view model, and a use case model.	at least page 11, lines 5-28; page 19, line 4 to page 33, line 1	at least one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
9	A server system as recited in claim 1, wherein one of the execution models performs tasks according to a first business purpose, and the multi-layer application being reconfigurable to achieve a different business purpose by installing another execution model that performs tasks according to the second business purpose.	at least page 11, lines 5-28; page 19, line 4 to page 33, line 1; also note at least page 4, lines 6-10; page 6, lines 11-14; page 9, lines 11-21	at least one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
10	A server system as recited in claim 1, wherein the interfacing layer comprises: a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and	at least page 12, line 1 to page 13, line 24	note at least data abstraction layer 208
	a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data.	at least page 12, line 1 to page 13, line 24	note at least data coordination layer 206
11	A server system as recited in claim 10, wherein the data coordination layer comprises one or more application data managers that interface the domain framework in the data abstraction layer into an application solution space of the problem-solving logic layer.	at least page 12, line 1 to page 13, line 24	note data coordination layer 206, and particularly the role of application data managers 240
12	A server system as recited in claim 1, wherein the multi-layer application can be adapted to access new resources by substituting in a new interfacing layer that supports the new resources.	at least page 4, lines 6-10; page 6, lines 11-14; page 9, lines 11-21	note generally the layers of Fig. 2, and particularly the data coordination layer 206 and the data abstraction layer 208 which interact with the resources 108
13	A server system as recited in claim 1, wherein the client devices support different data formats, the presentation layer being configured to select appropriate data formats for encoding the replies.	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11
14	A server system as recited in claim 1, wherein the client devices support different communication protocols, the presentation layer being configured to select appropriate communication protocols for delivering the replies to the clients.	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11
15	A server system as recited in claim 1, wherein the presentation layer is	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11

Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
	configured to determine how to display the replies for a particular client.		
16	A server system as recited in claim 1, wherein the presentation layer is configured to determine at least one of (1) a layout of individual replies, (2) display attributes in which to present the replies, and (3) a presentation theme.	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11
17	A server system as recited in claim 1, wherein the presentation layer comprises: a presentation module to determine how the replies will appear on the client devices to users; and	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11; note particularly presentation functionality 224
	a rendering module, separate from the presentation module, to determine how to render the replies on the client devices.	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11; note particularly content renderer 260
18	A server system as recited in claim 1, further comprising an authentication module to authenticate the client devices or users of the client devices.		authentication module 270
19	A server system as recited in claim 1, further comprising a constraint system to constrain operation of the multi-layer application according to a hierarchy of different constraints.	at least page 50, line 17 to page 55, line 25	at least Figs. 12 and 13
20	A server system as recited in claim 1, further comprising a constraint system to constrain operation of the multi-layer application according to multiple different constraints, the constraint system comprising a hierarchy of constraint layers, with each constraint layer containing a set of one or more constraints that customize operation of the multi-layer application.	at least page 50, line 17 to page 55, line 25	at least Figs. 12 and 13
21	A server system as recited in claim 1, further comprising: a constraint hierarchy of multiple constraint layers, each constraint layer containing a set of one or more constraints that constrain operation of the multi-layer application, the constraint layers being organized within the constraint hierarchy such that a first constraint layer limits a second constraint layer but the second constraint layer does not limit the first constraint layer; and	at least page 50, line 17 to page 55, line 25	at least Figs. 12 and 13; note particular hierarchy of constraints 1202
	a constraint resolver to resolve the constraint layers so that operation of the multi-layer application is constrained by a set of the constraints in the constraint layers.	at least page 50, line 17 to page 55, line 25	at least Figs. 12 and 13; note particularly constraint resolver 1204

Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
22	A server system as recited in claim 21, wherein the hierarchy of constraints comprises constraints selected from a group of constraints comprising: legally mandated constraints to constrain operation of the multi-layer application according to legal principles; company-mandated constraints to constrain operation of the multi-layer application according to preferences of a company that operates the application; customer constraints to constrain operation of the multi-layer application according to preferences of customers; cultural constraints to constrain operation of the multi-layer application according to cultural aspects; and end user constraints to constrain operation of the multi-layer application according to preferences of an end user.	at least page 50, line 17 to page 55, line 25	
23	A server system as recited in claim 1, further comprising a security policy enforcement module to enforce security restrictions on accessing information stored at the one or more resources.	at least page 15, lines 18-26; page 33, line 2 to page 45, line 20	at least security policy enforcement module 280; Figs. 7-9
24	A server system as recited in claim 23, wherein the security policy enforcement module is to enforce the security restrictions based on a set of low-level security rules defined using high-level permission concepts.	at least page 15, lines 18-26; page 33, line 2 to page 45, line 20	at least security policy enforcement module 280; Figs. 7-9; note particularly Fig. 8
25	A server system as recited in claim 1, wherein the presentation layer includes a form processor to generate a data input form for the multi-layer application by automatically adding, to a form definition that defines the data input form, validation code to validate subsequent inputs to one or more fields of the data input form.	at least page 56, line 1 to page 91, line 28	at least Figs. 14-19
26	A server system as recited in claim 25, wherein the form processor is to generate the data input form by identifying one or more custom tags associated with the data input form, to replace each of the one or more custom tags with another tag, and further to add to the form definition, for each of the one or more replaced tags, validation code to validate subsequent inputs to a field corresponding to the tag.	at least page 56, line 1 to page 91, line 28	at least Figs. 14-19
27	A server system as recited in claim 25, wherein the form processor is further to automatically identify one or more data input fields to be included in the form definition.	at least page 56, line 1 to page 91, line 28	at least Figs. 14-19
28	A server system as recited in claim 25, wherein the form processor is further to automatically identify one or more restrictions associated with a data input field of the data input form, and to determine the validation code based at least in part on the one or more restrictions.	at least page 56, line 1 to page 91, line 28	at least Figs. 14-19
29	A server system as recited in claim 1, further comprising:	at least page 92, line 1 to page 101, line 15	at least Figs. 20-23

Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
	a resource bundle containing locale-specific content that is authored for a particular locale;		
	and a resource bundle manager to populate a locale-independent core with the locale-sensitive content in the resource bundle to produce a computer-servable document that can be served by the multi-layer application to the particular locale.	at least page 92, line 1 to page 101, line 15	at least Figs. 20-23
30	A server system as recited in claim 29, wherein the resource bundle manager resides in the interfacing layer.	at least page 92, line 1 to page 101, line 15	at least Figs. 20-23
48	A method for processing client requests in a system, comprising: receiving requests from multiple clients, the requests being related to a business-related problem domain, wherein the business-related problem domain pertains to a particular category of business-related service;	at least page 16, lines 2-24	at least operation 302; clients 102; business logic layer 204
	processing the requests within problem-solving logic to produce replies within the business-related problem domain, the processing comprising requesting data to be used in formulating the replies; retrieving the data from one or more external resources and mapping the data to a domain framework for the business-related problem domain, the domain framework being independent from the problem-solving logic; and interfacing the problem-solving logic to the domain framework to obtain the data for use in processing the request,	at least page 17, line 23 to page 18, line 21; also note page at least page 12, line 1 to page 13, line 24	at least operations 308-314; resources 108; domain framework 250
	wherein a new business-related problem domain can be exchanged for a previous business-related problem domain by replacing one or more components of the system, without having to reconstruct an entire application solution for the new business-related problem domain.	at least page 4, lines 6-10; page 6, lines 11-14; page 9, lines 11-21	at least note generally the layers of Fig. 2
49	A method as recited in claim 48, further comprising structuring the replies for presentation to the clients.	at least page 18, line 16 to page 19, line 2; page 13, line 25 to page 15, line 17; ;page 45, line 21 to page 50, line 16	at least operations 316-320; presentation layer 212; Figs. 10 and 11
50	A method as recited in claim 48, further comprising: structuring the replies to define how the replies will appear when presented at the clients; and independent of said structuring, conforming the replies to output capabilities of the clients.	at least page 18, line 16 to page 19, line 2; page 13, line 25 to page 15, line 17; ;page 45, line 21 to page 50, line 16	at least operations 316-320; presentation layer 212; Figs. 10 and 11
51	A method as recited in claim 48, further comprising constraining how the replies are presented according to a hierarchy of constraints, wherein the hierarchy of constraints comprises multiple constraints such that a first constraint limits a second constraint but the second constraint does not limit the first constraint.	at least page 50, line 17 to page 55, line 25	at least Figs. 12 and 13
58	58. (New) A server system comprising: one or more computers; and	at least page 6, line 24 to page 8, line 18	at least multi-layer architecture 110 implemented on one or more

Claim	Claim Element	Exemplary and Non-Limiting Support in Text	Exemplary and Non-Limiting Support in Drawings
	a multi-layer application executing on the computers to handle client requests submitted by various client devices, the multi-layer application comprising:		computers 112 that interact with various client devices 102
	a problem-solving logic layer to process the client requests according to an associated problem domain, wherein the problem domain pertains to a particular category of service, the problem-solving logic layer containing one or more execution models to perform various sets of tasks when processing the client requests, the problem-solving logic layer producing replies to the client requests;	at least page 10, line 25 to page 11, line 28; page 19, line 4 to page 33, line 1	at least business logic layer 204; one or more execution models 230; Figs. 4-6 shows one example of an execution model for an asset catalogue application
	an execution environment layer to receive the client requests and select an appropriate execution model in the problem-solving logic layer for processing the client requests;	at least page 9, line 22 to page 10, line 24	execution environment 202
	an interfacing layer to interface the problem-solving logic layer with one or more resources so that the execution models may utilize the resources when processing the client requests, wherein the interfacing layer comprises: a data abstraction layer to obtain data from the resources and map the data into a domain framework that models information flow for a specific problem domain; and a data coordination layer that provides an interface for the problem-solving logic layer to access the domain framework of the data abstraction layer and obtain the data; and	at least page 12, line 1 to page 13, line 24	note the various layers in Fig. 2 that serve at interfacing role, including the data coordination layer 206 and the data abstraction layer 208
	a presentation layer to receive the replies produced by the problem-solving logic layer and to structure the replies in a manner that makes the replies presentable on the various client devices	at least page 13, line 25 to page 15, line 17; page 45, line 21 to page 50, line 16	at least presentation layer 212; Figs. 10 and 11